

REMARKS/ARGUMENTS

Claim Rejections – 35 U.S.C. § 103

The Patent Office rejected Claims 1-6, 8-9 and 11-13 under 35 U.S.C. § 103(a) as being unpatentable over Bell (“ Bell ’778 ”, U.S. Patent Number 6,266,778) in view of Bell (“ Bell ’030 ”, U.S. Patent Number 6,170,030). The Patent Office rejected Claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Bell ’778 in view of Bell ’030 and further in view of Olarig et al. (“Olarig”, U.S. Patent Number 6,449,677). Claims 14-18 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell ’778 in view of Bell ’030 and further in view of Kotha et al (“Kotha”, 6,067,071). Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell ’778 in view of Bell ’030 and Kotha, and further in view of Cepulis et al. (“Cepulis”, U.S. Patent Number 6,061,754). Claims 21-23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell ’778 in view of Bell ’030 and in view of Cherukuri et al (“Cherukuri,” U.S. Patent Number 5,745,732). Claims 24-26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell ’778 in view of Bell ’030 and in view of Cherukuri and further in view of Cepulis. Claims 27-29 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell ’778 in view of Bell ’030 and Cherukuri and further in view of Kotha. Claim 30 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Bell ’778 in view of Bell ’030 and further in view of Kotha. Applicants respectfully traverse these rejections.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Ryoka*, 180 U.S.P.Q. 580 (C.C.P.A. 1974). *See also In re Wilson*, 165 U.S.P.Q. 494 (C.C.P.A. 1970).

Further, “to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” (emphasis added) (MPEP §

2143). If an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious. (emphasis added) *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Claims 1 and 9 each recite an element of “the first and second paths are decoupled from the data transfer.” The Patent office admitted that Bell ’778 does not explicitly disclose the command queuing interface including a first path and the command completion interface including a second path. (Office Action, Page 3). However, the Patent Office asserted that “it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement separate command queue including a first path and command completion queue including a second path as taught by Bell (6,170,030) in the system of Bell to allow the command queue and the completion queue *to operate in parallel fashion and thus improve the system’s speed.*” Applicants respectfully disagree.

Bell ’030 teaches an apparatus and method for re-streaming data that has been queued in a bus bridging device. In Bell ’030, re-streaming data (by maintaining different queues) reduces traffic congestion in the computer system by reducing loss of data that has been pre-fetched and queued in a bus bridge device. As asserted by the Patent Office, Bell ’030 is concerned about the problem of *improving the system’s speed*. However, Bell ’030 is not concerned about the problem of a bus interface that may require an extensive redesign of numerous internal modules. The present invention is directed to a bus interface that provides a generic interface that would not require an extensive redesign of numerous internal modules through utilizing a different bus interface controller.

Moreover, Bell ’030 fails to disclose “the first and second paths are decoupled from the data transfer,” as recited in Claim 1 and 9. Instead, in Bell, a *Fast bus* is used for both requests (commands) and data. In the present invention, the command path and completion paths are decoupled from the data transfer path so that the data interface is separated from the command interfaces.

Thus, independent Claims 1 and 9 are nonobvious under 35 U.S.C. § 103(a). Claims 2-8, 11-13 are believed to be allowable based on their dependence upon allowable base claims.

Regarding the rejection of Claim 14, Applicants respectfully submit that Claim 14 includes elements that have not been disclosed, taught or suggested by any of the references (Bell '778, Bell '030 and Kotha). The Patent office admitted that Bell '778 does not explicitly disclose the command queuing interface including a first path and the command completion interface including a second path. (Office Action, Page 7). However, the Patent Office asserted that "it would have been obvious to one of ordinary skill in the art at the time of the invention was made to implement separate command queue including a first path and command completion queue including a second path as taught by Bell (6,170,030) in the system of Bell to allow the command queue and the completion queue *to operate in parallel fashion* and thus *improve the system's speed*."

As indicated in the foregoing remark, "the first and second paths are decoupled from the data transfer," as recited in Claim 14 has not been taught or suggested by Bell '778 or Bell '030. Kotha is cited for the disclosure of the first and second bus controller as cores, which the Patent office admitted Bell '030 does not explicitly disclose. However, Kotha does not cure the defect of Bell '778 or Bell '030 in reference to Claim 14.

Accordingly, Claim 14 is nonobvious under 35 U.S.C. § 103(a). Claims 15-20 are believed to be allowable based on their dependence upon Claim 14.

With respect to the rejection of Claim 19, any of the references (Bell '778, Bell '030, Kotha and Cepulis) fails to teach, suggest, or disclose of "the first and second paths are decoupled from the data transfer interface," as recited in Claim 14, from which Claim 19 properly depends. Kotha is cited for the disclosure of the first and second bus controller as cores. Cepulis is cited for the disclosure of the bus bridge/switch interface

conforming to a USB standard, SCSI standard, and a fiber standard. However, Cepulis fail to make up the defect of Bell '778 and Bell '030 since Cepulis does not teach or suggest to decouple the command path and completion paths from the data transfer path so that the data interface is separated from the command interfaces. Thus, Claim 19 is nonobvious under 35 U.S.C. § 103(a) and believed to be allowable.

Claim 21 also recites an element of “the first and second paths are decoupled from the data transfer interface.” As indicated in the foregoing arguments, “the first and second paths are decoupled from the data transfer” has not been taught or suggested by Bell '778 or Bell '030. Cherukuri is cited for the disclosure of *arbiter* for resolving competing demands of the first and second bus interface controllers which the Patent office admitted Bell '778 and Bell '030 does not explicitly disclose. However, Applicants respectfully submit that the ancillary reference, Cherukuri does not make up for the defect of Bell '778 or Bell '030 since Cherukuri fails to teach or suggest to decouple the command path and completion paths from the data transfer path so that the data interface is separated from the command interfaces.

Furthermore, any of the references (Bell '778, Bell '030 and Cherukuri), either alone or combination thereof, fails to teach, suggest, or disclose all the elements recited in Claim 21.

Accordingly, a *prima facie* case of obviousness for Claim 21 has not established. Thus, Claim 21 is nonobvious under 35 U.S.C. § 103(a). Claims 22-29 are believed to be allowable based on their dependence upon Claim 21.

With respect to the rejection of Claim 30, any of the references (Orlarig, Bell '778 and Kotha) fails to teach, suggest, or disclose of all the elements of Claim 30. For example, “the first and second paths are decoupled from the data transfer interface,” as recited in Claim 30, has not been taught, suggested or disclosed by any of the references since Bell '778 merely teaches a synchronous bus system (not equivalent to command path and completion paths separated from the data transfer path), Orlarig merely teaches

a high speed connection for PCI devices through extended commands and attributes and Kotha merely teaches a display controller for controlling the output of graphics display data generated within a core VGA logic.

Accordingly, a *prima facie* case of obviousness for Claim 30 has not established. Thus, Claim 30 is nonobvious under 35 U.S.C. § 103(a). Removal of all the pending rejections under 35 U.S.C. §103 is respectfully requested.

CONCLUSION

In light of the foregoing remarks, Applicants respectfully request a timely Notice of Allowance.

Respectfully submitted,

LSI Logic Corporation,

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By: 

Sunah K. Lee
Reg. No. 53,198

Sunah K. Lee
SUITER – WEST PC LLO
14301 FNB Parkway, Suite 220
Omaha, NE 68154
(402) 496-0300 telephone
(402) 496-0333 facsimile